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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,912

03/23/2007

Graham Eastham

31229-226445

1376

26694

7590

08/25/2008

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EXAMINER

WITHERSPOON, SIKARL A

ART UNIT

PAPER NUMBER

1621

MAIL DATE

DELIVERY MODE

08/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,912	Applicant(s) EASTHAM ET AL.	
	Examiner Sikarl A. Witherspoon	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55, 58 and 60-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-47, 51-55, 58 and 60-63 is/are rejected.
- 7) ☒ Claim(s) 48-50 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The examiner has considered the amendment and response filed by applicants on June 16, 2008. Applicants' amendment was not effective in placing the case in condition for allowance. Applicants' cancellation of claims 56, 57 and 59 has overcome the rejection of said claims; however, the following rejection(s) of claim 58 have been maintained.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 58 is rejected under 35 U.S.C. 102(b) as being anticipated by Iverson et al (Organometallics, 2001).

The rhodium complex disclosed by the reference anticipates the instant claim (p 5746).

Claim 58 is rejected under 35 U.S.C. 102(b) as being anticipated by Hoffmann et al (J. Organometallic Chem, 1995).

The rhodium complex disclosed anticipates the instant claims (p 53 compds 10 and 11; fig. 1).

The following rejection has been made in view of applicants' amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 60 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al (US 4,504,684).

Example 4 (col. 5, line 64 to col. 6, line 8) renders the instant claim obvious, said claim being drawn to a hydroformylation reaction medium.

The difference between the reaction medium described in example 4 and the instant claim is that example 4 teaches a bidentate phosphine substituted with phenyl groups, not with two tertiary carbon groups as recited in the instant claim. However, Fox teaches that the phosphorus atom (i.e. where X is P) may be substituted by two alkyl groups. Given the broadest reasonable interpretation of this limitation, a person having ordinary skill would have recognized that tertiary alkyl groups are included as a possible substituent for the phosphorus atom. Absent a showing of unexpected results, the examiner takes the position that it would have been obvious for a person having ordinary skill in the art to try to use various alkyl substituents, including tertiary alkyl groups, in order to arrive at a bidentate phosphine ligand that would optimally enhance the activity of the catalytically active metal.

Claims 1-47, and 51-55, 61, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al (US 4,504,684) in view of Wang et al (US 6,348,621).

The claims are drawn to a process for hydroformylation of an olefin in the presence of a catalyst system comprising a Group VIII metal compound, a bidentate phosphine, and wherein a chlorine moiety is present in said Group VIII metal compound.

Fox et al teach such a hydroformylation, in the presence of a rhodium complex containing a chlorine moiety, the reaction being conducted at 200°C and a pressure of 1100 psi [about 76 bar] (example 4, col. 5, line 64 to col. 6, line 8).

The difference between Fox et al and the instant claims is that the complex catalyst employed by Fox et al is a polymeric complex, while the instant claims do not expressly recite a polymeric complex. However, Wang et al teach a catalyst complex similar to that of Fox et al, i.e., comprising a Group VIII metal and a bidentate phosphine, said complex being substantially similar to the complex employed in the present invention, and shown to be useful in carbonylation reactions (hydroformylation is a type of carbonylation).

It would have been obvious to a person having ordinary skill in the art that the ligands taught by Wang et al may have been employed in and substituted for the ligands taught by Fox et al, with the reasonable expectation of proving additional bidentate ligands useable with the chlorine-containing Group VIII metal employed as catalytically active material in the hydroformylation process taught by Fox et al.

Claims 48-50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed June 16, 2008 have been fully considered but they are not persuasive. With regard to the rejection of claim 58 under 35 U.S.C. 102, applicants argue that neither Iverson et al nor Hofmann et al teach a "hydroformylation reaction catalyst system". In other words, applicants are arguing that the catalysts taught by Iverson et al and Hofmann ET al are used in reactions other than a hydroformylation reaction. This argument is not persuasive. Claim 58 can be viewed as a product claim. The intended use of the product has not been given much patentable weight. The catalysts disclosed in the cited references anticipate the claimed catalyst system.

With regard to the rejection of claims 1-47 and 51-55 (and newly added 61 and 63) under 35 U.S. C. 103, applicants argue unexpected results afforded by employing a catalyst comprising bidentate compounds with tertiary carbon substituents. Fox et al do not *expressly* teach a bidentate phosphine with tertiary carbon substituents, but Wang et al, which was used as a secondary reference, do teach bidentate phosphines having tertiary carbon substituents. Therefore, in view of the combined reference teachings, a person having ordinary skill in the art could have readily arrived at such a bidentate phosphine. As far as applicants' assertion of unexpected results, the examiner's

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position is that alleged unexpected results should be backed by a side-by-side comparison of the present invention with the closest prior art of record, and not a comparison of the results obtained from applicants' examples with the results of examples performed in the references relied upon for the rejection of the claims by the examiner.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sikarl A. Witherspoon/
Primary Examiner, Art Unit 1621